

CONFERENCE OF THE EIGHTEEN-NATION COMMITTEE  
ON DISARMAMENT

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FINAL VERBATIM RECORD OF THE THIRTEENTH MEETING

held at the Palais des Nations, Geneva,  
on Monday, 2 April 1962, at 10 a.m.

Chairman:

Mr. HASSAN

(United Arab Republic)

THE UNIVERSITY  
OF MICHIGAN

FEB 15 1963

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## PRESENT AT THE TABLE

Brazil:

Mr. de MELLO-FRANCO  
Mr. RODRIGUES RIBAS  
Mr. ASSUNCAO de ARAUJO  
Mr. de Alencar ARARIPE

Bulgaria:

Mr. M. TARABANOV  
Mr. K. CHRISTOV  
Mr. V. PALINE  
Mr. N. MINTCHEV

Burma:

Mr. J. BARRINGTON  
U Tin MAUNG  
U Aye LWIN

Canada:

Mr. E.L.M. BURNS  
Mr. J.E.G. HARDY  
Mr. J.F.M. BELL  
Mr. R. TAIT

Czechoslovakia:

Mr. J. HAJEK  
Mr. E. PEPICH  
Mr. M. ZEMLA  
Mr. V. VAJNAR

Ethiopia:

Mr. T. GEBRE-EGZY  
Mr. M. HAMID  
Mr. A. MANDEFRO

India:

Mr. M.J. DESAI  
Mr. A.S. LALL  
Mr. A.S. MEHTA  
Mr. C.K. GAIROLA

## PRESENT AT THE TABLE (cont'd)

Italy:

Mr. F. CAVALLETTI  
Mr. C. COSTA-RIGHINI  
Mr. F. LUCIOLI-OTTIERI  
Mr. G. TOZZOLI

Mexico:

Mr. L. PADILLA NERVO  
Mr. E. CALDERON PUIG  
Miss E. AGUIRRE  
Mr. D. GONZALEZ

Nigeria:

Mr. A.A. ATTA

Poland:

Mr. M. LACHS  
Mr. M. BIEN  
Mr. T. WISNIEWSKI  
Mr. W. WIECZOREK

Romania:

Mr. G. MACOVESCU  
Mr. C. SANDRU  
Mr. E. GLASER

Sweden:

Mr. R. EDBERG  
Mr. B. FRIEDMAN  
Mr. H. BLIX

Union of Soviet Socialist Republics:

Mr. V.A. ZORIN  
Mr. S.K. TSARAPKIN  
Mr. P.F. SHAKHOV  
Mr. I.G. USACHEV

United Arab Republic:

Mr. A.F. HASSAN  
Mr. A. EL-ERIAN  
Mr. M.S. AHMED  
Mr. S. ABDEL-HAMID

PRESENT AT THE TABLE (cont'd)

United Kingdom:

Mr. J.B. GODBER  
Sir Michael WRIGHT  
Mr. J.S.H. SHATTOCK  
Mr. D.N. BRINSON

United States of America:

Mr. A. DEAN  
Mr. C.C. STELLE  
Mr. D.E. MARK  
Mr. T.R. PICKERING

Special Representative of the  
Secretary-General:

Mr. O. LOUTFI

Deputy to the Special Representative  
of the Secretary-General:

Mr. W. EPSTEIN

The CHAIRMAN (United Arab Republic): I declare open the thirteenth meeting of the Conference of the Eighteen Nation Committee on Disarmament.

Mr. BARRINGTON (Burma): My delegation has read with great care the verbatim records of the five meetings of the Sub-Committee on a Treaty for the Discontinuance of Nuclear Weapon Tests (ENDC/SC.1/PV.1-5) and the statements which were made in this Committee on 23 March 1962 (ENDC/PV.8). They make interesting but gloomy reading. The exercise has left us with a strong sense of foreboding. The general resumption of nuclear weapon tests by all the nuclear Powers in the near future -- for that is what we face -- is clearly against the interests of peace and therefore of humanity as a whole. But I would go further and say that they are, in fact, against the interests of those very nations which will be conducting them. The strange thing is that those nations know it; in fact, they know it better than we do. We believe them when they say that they do wish to bring nuclear weapon tests to an end, and yet, despite all their great power -- or perhaps because of it -- it seems they are powerless to prevent themselves from doing something that they do not wish to do. Our sympathies go out to them, but since charity begins at home we sympathize most of all with ourselves. That is why we have decided to intervene in this discussion.

In his statement in this Committee on 21 March 1962 (ENDC/PV.6, p.25), my Foreign Minister made clear the attitude which my country takes on the question of nuclear weapon tests. We oppose them all, regardless of time, place and environment. Every new nuclear weapon test constitutes a new threat to peace, and most of them, perhaps even all of them, represent a threat to the health and future of the human race. That is why we oppose them, but over and above these already overriding reasons we have also to consider the effect that the resumption of tests will have on this Conference and on the very question of disarmament.

In the course of private exchanges, we have heard it stated that the resumption of tests is inevitable and that this Conference must and can learn to live with them. In other words, it is assumed that we can usefully continue our discussions here on general and complete disarmament and on the so-called collateral questions while the nuclear Powers engage in collateral nuclear weapon exercises of their own.

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Let us examine this assumption more closely in the context of the situation in which we find ourselves in this Conference. I do not share the view of some that this Conference is doomed to failure. Indeed, I have been moderately encouraged by the progress we have made so far, and particularly by the climate and atmosphere which has prevailed up till now. But who will deny that the going has not been easy, and this at a time when we have been dealing with generalities and matters of procedure? Would anyone deny that the main obstacles still all lie ahead and that we will all need a helpful climate and atmosphere if we are to have any chance of success in overcoming them? Would such an atmosphere be engendered by a series of nuclear explosions spread over a period of weeks and possibly of months? And even if we who are assembled in Geneva could take a pragmatic view of this paradoxical situation, would the outside world understand? Indeed, would they even hear us against the reverberating echoes of the nuclear tests?

If I ask these questions, it is only that I wish to draw attention to the need for us to try to see clearly the way ahead and not indulge in wishful thinking. And when we do look ahead, I suggest that the conclusion is inescapable that the resumption of nuclear weapon tests by the nuclear Powers can only pose a serious threat to this Conference. In other words, time may be running out for us and this makes it essential for all of us to do what we possibly can to help find an agreement on the cessation of nuclear weapon tests acceptable to all the Powers directly concerned, or, failing that, to look for some other acceptable means of averting the threat to which I have referred.

My delegation is happy to see that the Sub-Committee is to continue with its meetings, that further efforts are to be made to try to reach agreement. We would like to make some comments on the positions taken by the two sides. In so doing we shall try to be as objective as it is possible for us to be. We trust that our comments will be received in the spirit in which they are offered and that they will be taken into account in the further discussions which are to be held in the Sub-Committee. I need hardly add that our sole purpose in making them is to help to bring the positions of the two sides closer.

After the most careful and earnest consideration, it seems to us that the claim of the Soviet Union that all nuclear explosions can be detected and identified by means of national detection systems, and that no international

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control is therefore necessary, leaves one vital question unanswered. It is: What happens in the case of a dispute as to the facts of a particular event? It may be said that there could be no dispute, because all national systems involved would give the same result. But we are not sure that this answers the question. After all, however good they may be, the instruments which record the events do not get up and speak. What they do is to record data which trained personnel interpret. It is therefore not inconceivable that interpretations may differ. How would a difference of this kind be resolved unless there were in existence some impartial international scientific body acceptable to all the nuclear Powers whose function would be to settle such disputes, if necessary after making such enquiries and inspections as may be considered by it to be essential? Such a body would, by its very function, have to work in close co-operation with all national systems. Obviously such an international scientific body should not be any more elaborate than it needs to be. But of the need for such a body, my delegation has very little doubt. Without it, every dispute as to the facts of any event would imperil a nuclear test ban treaty; with it, the probabilities are that every dispute would be found to be the result of genuine misinterpretation. We make this categorical statement because of our confidence that no State which signed a nuclear test ban treaty would think of engaging in clandestine tests. Thus the existence of such an international scientific body would seem to be inseparable from a successful test ban treaty.

On the other hand, my delegation seriously wonders whether such an international scientific body need be as elaborate as that envisaged by the two Western nuclear Powers represented at this Conference. If our understanding is not incorrect, the principal cause of concern would appear to be the difficulty of distinguishing between certain types of earthquakes and underground nuclear explosions. There seems to be relatively less concern about the ability to detect and identify other nuclear explosions, that is, those under water, in the atmosphere or biosphere. This would appear to be borne out by the observations contained in chapter IV of the report of the Conference of Experts which met in 1958 (EXP/NUC/28). But if this is correct, the next question that arises is, how significant from the military point of view are underground nuclear tests, particularly those with a low yield which are difficult to distinguish from earthquakes? This is a matter of some importance because it

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stands to reason that if they do not, in fact, have much military significance the urge to indulge in them will not be great. After all, even underground explosions are expensive undertakings.

In this connexion we cannot help but be impressed with the fact, to which Mr. Zorin referred, that during the three-year voluntary moratorium, which ended with the Soviet Union's resumption of tests in 1961, neither side had ever charged the other with any violation, although each must have received hundreds of earthquake signals from within the territory of the other. Mr. Dean has explained that the United States scientists did indeed record hundreds and hundreds of seismic or acoustic signals during these three years, that some of them had aroused suspicion, but that the United States had kept silent because it could not identify any of the events with certainty as a nuclear explosion, and also because it did not wish to voice suspicions in a way that might interfere with the test ban negotiations.

My delegation believes that in fact none of these signals which aroused suspicion was due to nuclear explosions, just as it believes that none of the signals recorded by the Soviet scientists, during the same period, of events in the United States had its origin in nuclear tests. However, that is only by the way. The significant fact is that the standard which the United States Government applied in those cases was apparently that of military significance. In other words, had any of the signals which United States scientists recorded been suggestive of a militarily significant event it is unlikely that the United States would have refrained from voicing its suspicions. Could not the same test be applied now? Is it essential that any system of international control over a test ban treaty should be such as to be able, theoretically, to identify every suspicious event, regardless of its military significance? Might we not be running the risk of losing sight of the forest by peering too closely at the trees? Might not a less elaborate international system, perhaps omitting control posts from the territories of those who object to them, but with the right of conducting an agreed number of properly safeguarded on-site inspections by the international control organ, serve all our purposes just as well?

These are the thoughts which occurred to my delegation as we read the verbatim records. We offer them for what they are worth. They obviously are not, and do not pretend to be, proposals. Whether they serve any purpose or not,



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it is our fervent prayer that an agreement can yet be reached in time between the great Powers on this matter of the cessation of nuclear tests, for it would be more than tragic if antipathy to even a minimum of international control on the one side and insistence on near-theoretical perfection on the other were to doom the entire world to a new cycle of nuclear weapon tests, with all the evils that would inevitably follow in its wake.

Mr. DEAN (United States of America): I have listened with great interest and respect to the remarks made this morning by the representative of Burma. I shall now attempt to set forth the situation as we see it, in as fair and objective a manner as possible.

This morning a plenary meeting of our Committee is again devoting its time to the most important problem of negotiating a treaty for the banning of all tests of nuclear weapons. The strongly positive attitude of the United States towards this imperative objective has been proclaimed innumerable times, in word and in deed. President Kennedy reiterated this when, on 29 March, he said: "We remain earnestly determined to work for an effective treaty, and we remain ready to conclude such a treaty at the earliest possible time."

Our deeds in this regard speak for themselves. We and the United Kingdom have sat at the table with the Soviet Union for well over three years in the Conference on the Discontinuance of Nuclear Weapon Tests. When the Soviet tests were announced on 1 September 1961, what did we do? Mr. McCloy and I continued the discussions with Deputy Foreign Minister Zorin, and we arrived at the Joint Statement of Agreed Principles on general and complete disarmament (ENDC/5). President Kennedy went forward with our plans when he laid before the United Nations on 25 September our programme for general and complete disarmament in a peaceful world (ENDC/6). Together with the United Kingdom we went forward in the United Nations General Assembly and obtained the General Assembly's endorsement of the principles set forth in our draft treaty for a nuclear test ban. Those principles were adopted by the General Assembly (resolution 1649 (XVI)), with the Soviet Union voting against them. At the same time we continued the discussions in the Conference on the Discontinuance of Nuclear Weapon Tests here in Geneva. Thus, both before the massive Soviet test series in the autumn of 1961 and thereafter, at all times, we have done all that could in reason and good conscience be asked of us to reach agreement on this important point with the Soviet Union.

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Our criterion has always been the creation of an effective international control system to monitor the actions of States signing a nuclear test ban treaty, so as to ensure that each fulfilled its obligations under that treaty. Within the broad limits of that criterion we have done everything possible to accommodate Soviet worries and Soviet desires.

The draft treaty which the United States and the United Kingdom tabled in Geneva on 18 April 1961, together with its several subsequent amendments (ENDC/9), represented not the mere beginning of negotiations but rather their culmination. Incorporated in that draft were all the results of over two years of hard East-West discussion of all treaty details, and the constructive changes which we and the United Kingdom have offered in the last eleven months. We have gone continually forward to meet Soviet demands.

Thus it is that the two Western Powers now offer to sign immediately a totally comprehensive treaty with the so-called threshold eliminated. This treaty would ban all nuclear tests in all environments. But let me be clear: although the Geneva experts had worked out this system, and although we had been discussing this treaty with the threshold, when we offered to sign this totally comprehensive treaty we did not ask for any more control posts, despite the fact that the number of events would be vastly increased, and we did not ask for a greater number of on-site inspections. On the contrary, we tried to work out a system between seismic and non-seismic territories in the Soviet Union.

So, starting from the basis of the control system unanimously recommended in 1958 by Soviet, United Kingdom, United States and other scientists (EXP/NUC/28), we have devised carefully-thought-out political and organizational safeguards for incorporation into our draft treaty, to assure the Soviet Union both of complete equality in control operations and of the minimum of essential detection, identification and verification activities within Soviet territory.

At the same time, we have offered the Soviet Union even greater inspection opportunities in our respective territories. East and West would have absolute parity on the top policy-making control commission, on which three non-associated nations would also sit. The nationals of Eastern and Western countries would also have numerical equality at every control post and at the system headquarters, at every level, from top to bottom. Nationals of non-aligned nations would also serve at these installations. All auxiliary services would be supplied by

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nationals of host countries. Indeed, the Soviet Union has been granted a veto right over the appointment of the administrator of the control system, over the adoption of the total annual budget, over any major changes in the control system and over all amendments to the treaty.

An annual maximum ceiling of twenty inspections per year in the vast territory of the Soviet Union has been proposed by the West, even though the Soviet Union could carry out up to forty inspections per annum on the smaller territories of the United Kingdom and the United States. Although the Geneva experts suggested thirty-seven control posts for the continent of Asia, we have constantly examined this question with our scientists. The number of control posts on Soviet territory has been reduced from the original twenty-eight to nineteen, which our scientists tell us is the lowest level consistent with carrying out the 1958 recommendations of the scientists. But the number remains proportionally higher for the United States and United Kingdom territories.

At the request of the Soviet Union, provision has been made for the expanded use of the nationals of non-associated countries on inspection teams, and we have proposed during the last month, as I have just indicated, to put a very low ceiling on the number of annual inspections in the aseismic or non-earthquake parts of the Soviet Union, which constitute the bulk of Soviet territory. We have offered to discuss our data on this question with the Soviet Union, but so far it has declined to discuss such data.

I cannot emphasize too strongly, moreover, that whatever control arrangements the United Kingdom and the United States ask the Soviet Union to accept to monitor a test ban treaty, we are more than willing to install in our own countries. We do not seek one iota more of international control than is necessary, but we cannot settle for less than is essential to protect free world security.

Why do we speak of the need for control, and why are we convinced that it must be internationally arranged? Why would not a mere paper pledge without any international controls, of the type which the Soviet Union is now proposing, be sufficient? Nuclear testing is synonymous with the development of nuclear weapons. Significant development is impossible without testing. To prevent the further development of weapons by means of a test ban is a measure of genuine anticipatory or preventive disarmament. As such, it must be effectively

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internationally monitored in the same way as every other measure of disarmament. Only in this way can we build confidence and give reciprocal assurance that neither side is benefiting illegally from the successful clandestine violation of such a disarmament measure.

In other words, the existing military balance in nuclear weapons, with all that this means for the international political balance, must not be upset by the violation of an uncontrolled test ban. The crucial factor, therefore, is objective international control. By this we mean control which is both technically adequate and organizationally sound, so that confidence is generated among nations that the treaty is being properly carried out by all the signatories.

We in the United States obtain some degree of security for ourselves and the free world from our military forces armed with nuclear weapons. Nevertheless -- and let me be very clear on this point -- the United States strongly believes that everyone's security would be significantly greater in conditions of general and complete disarmament. We also believe that, pending the attainment of general and complete disarmament, everyone's security would be somewhat greater than it is now if the race in the development of new nuclear weapons were halted, that is, if there were an internationally controlled nuclear test ban treaty.

However, this somewhat greater security could be achieved only if both sides were really and truly to cease testing in all environments. A unilateral halt by one side, while the other continued to test in secret, would only jeopardize world security more than ever before.

Mr. Tsarapkin, in our test ban Sub-Committee last week, objected even to our mentioning of the possibility of violations of a test ban treaty. At the fifth meeting, for example, he said:

"The philosophy which you expound is that a treaty is being concluded to make it possible to violate it, and there is to be international control in order to catch the violator. This is your philosophy. We disagree and we categorically reject it. If you wish to sign a treaty in order to violate it, let us stop such pointless negotiations. Are the thousands of treaties which have been and are being concluded between States based on the assumption that the parties sign the treaty in order to violate it secretly? No; we cannot accept this philosophy."

(ENDC/SC.I/PV.5, page 61)

(Mr. Dean, United States)

I must say, in all good conscience, that we do not believe that Mr. Tsarapkin's point of view is either tenable or reasonable. It is totally inconsistent with the sixth principle in the Joint Statement of Agreed Principles regarding control measures, and it also contradicts what Foreign Minister Gromyko said at the second meeting of our Committee, namely;

"Our country does not intend to take anyone at his word, least of all States which have established closed military alignments, are pursuing a policy of building up armaments and have placed their military bases as close as possible to the Soviet Union. Nor do we expect others to take us at our word. The Soviet Union is a firm advocate of strict control over disarmament." (ENDC/PV.2, page 11)

Now I submit that those words are equally applicable to control posts and on-site inspection with respect to a nuclear test ban treaty on the territory of the Soviet Union.

The hard and unpleasant fact of life is that at this moment of history there exists a large amount of mutual suspicion, distrust and ideological conflict between the United States, with its open society, and the Soviet Union, with its closed society. We regret this, but there it is.

For its part, the United States strongly desires to conclude reciprocally advantageous treaties with the Soviet Union, such as a nuclear test ban treaty and a treaty on general and complete disarmament. But the absolute prerequisite for any such United States commitment is that there be objective and effective means to establish that both the Soviet Union and the United States are in practice living up to their mutual obligations. This was the position that we took in 1958, and it is what we say today.

When we made this issue clear four years ago, the Soviet Union was willing to send its scientists to join with Western scientists in a careful examination of the technical requirements of an adequate system of monitoring compliance with a test ban treaty. The result of that examination was a document which each delegation has before it, the report of 20 August 1958 of the Geneva experts (EXP/NUC/28), which contains full conclusions and recommendations on establishing an international control system over a nuclear test ban treaty. This report was subscribed to unanimously by the scientists present at that experts' Conference, including the Soviet scientists and Mr. Tsarapkin. It was approved by all three of the then nuclear Powers, including the Soviet Union, before 1 September 1958,

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both as to its contents and as a basis for forthcoming political negotiations aimed at concluding a nuclear test ban treaty.

An additional technical report on monitoring tests at high altitudes and in outer space (GEN/DNT/HAT/8) was approved unanimously in July 1957 by the scientists of the United States, the United Kingdom and the Soviet Union, and subsequently by their three Governments. It has also served as part of the technical basis for nuclear test ban negotiations.

At the fourth meeting of the test ban Sub-Committee, I cited a number of fairly recent Soviet statements incorporated in the verbatim records of the Conference on the Discontinuance of Nuclear Weapon Tests. All of these statements endorsed the control system recommended by the Geneva experts.

At the two hundred and fourteenth meeting on 15 June 1960, Mr. Tsarapkin said, for example:

"... we are profoundly convinced of the correctness of the conclusions and recommendations made by the scientists of the eight States, and approved by the Governments of the Soviet Union, the United States and the United Kingdom." (GEN/DNT/PV.214, page 5)

On 21 March 1961, at the two hundred and seventy-fourth meeting, Mr. Tsarapkin declared that:

"... the Soviet Union has been and is still opposed to any revision of the conclusions of the Geneva Conference of Experts ..." (GEN/DNT/PV.274, page 6).

In the official aide-mémoire of 4 June 1961 of the Soviet Government to the United States Government, it was said that:

"... the Soviet Union, like the United States, considers that strict international control should be established over the discontinuance of tests."  
(GEN/DNT/111, page 2)

The Soviet note of 5 July 1961 reiterated Soviet Union support of the experts' report of 1958, and then added:

"But even if the control system is to some extent inadequate, this can by no means be pleaded as an obstacle to agreement, since, as science and engineering progress, increasingly efficient instruments will be designed, and consequently the control system will be improved."

(GEN/DNT/113, page 4)

(Mr. Dean, United States)

It can thus be seen that, right up to the time when the Soviet Union announced its unilateral resumption of nuclear weapon tests in August 1961, it fully supported the experts' report and the concept of an international control system. Of course, the two sides were still not in agreement on many political and organizational questions surrounding the control system to be embodied in the nuclear test ban treaty, but there were very few apparent disagreements on the technical measures or on their necessity.

Despite this, after the Soviet Union had unilaterally resumed its nuclear tests in September 1961, the Soviet Government made a complete about-face by announcing to an astounded and disbelieving world that no international control system was necessary and that the controls recommended by the Geneva experts in 1958 could all be supplanted by so-called national detection systems.

Permit me to describe in some detail the nature of the international control system which the experts recommended in 1958. This will enable a better appreciation of just what drastic changes the Soviet Union is now advocating.

The 1958 experts faced the problem, as we do today, of monitoring four environments to ensure against clandestine testing. These four environments were the atmosphere to a height of about 50 kilometres, high altitudes above 50 kilometres, outer space, on and under water, and under ground.

The scientists in 1958 found that if a system were to be effective it would have to consist of a global network of control posts, of a system of far-earth and solar satellites, and of a headquarters for worldwide control operations, for data analysis and for administration. Regarding control posts, with a world total set at 170 to 180, specific figures were given for the number of posts to be put on each continent, on ocean islands and afloat -- that is, on specially equipped vessels.

The key to the effective use of control posts was their global distribution and their systematic spacing at regular distances -- 1,700 kilometres apart in aseismic, or non-earthquake, areas and 1,000 kilometres apart in seismic areas. Any gaps in this network would in turn cause gaps in control effectiveness. Of this there can be no question, because many seismic signals which emanate from either earthquakes or underground nuclear detonations fade with distance and become lost unless stations or control posts relatively near to the disturbance are so situated as to record the signals. The multiplication of control posts many kilometres away will not help if the signals emanating from the event itself are lost.

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All control posts were to be equipped with instruments to detect possible atmospheric and underground nuclear tests, namely electromagnetic detectors, acoustic detectors, chemical analysis equipment for processing air samples for radioactivity, and seismographs. Control posts near oceans were also to have hydroacoustical detectors for possible underwater nuclear tests, and about one-third of the control posts were to have optical scanning devices for possible nuclear tests above the atmosphere but below those more distant areas of outer space which the planned far-earth or solar satellite systems could monitor.

I have been recently reviewing, for the past six or seven months, this system of the 1958 experts, and I have on many occasions raised the question which the representative of Burma has brought up this morning. I have repeatedly asked for conferences, I have repeatedly asked for more data, and I have been assured by all of our foremost scientists, including those at universities, that the system of the Geneva experts is not too elaborate, that it is necessary and that it is not possible to monitor the specific under-water tests which the representative of Burma mentioned without this system of control. If anyone has any additional scientific data to contribute on that point, I would be only too happy to receive them.

To supplement atmospheric controls on the ground, regular and special aircraft sampling flights over oceans and national territories were provided for. These special aircraft flights were specifically intended to follow up unidentified atmospheric events. To achieve adequate underground controls it was envisaged that a certain number of on-site inspections would take place at the sites where suspicious seismic events were believed to have occurred.

There has been so much confusion about this question of underground controls that it merits some additional explanation. This is especially pertinent since we now know that, apart from tests in outer space, underground tests are the hardest to monitor effectively, even with an international system, and also that very distinct and important military gains in nuclear weapons can be made by such tests. The tests in the low kiloton yield can be of tremendous military significance in the anti-missile field even though they may not be of importance in the development of weapons themselves.



(Mr. Dean, United States)

The first problem in monitoring underground tests is to discover that something has occurred -- in other words, to detect seismic signals which indicate that a seismic event has taken place. The second problem is to know approximately where this seismic event took place. The third problem is to learn the exact nature of the event, namely, whether a natural earthquake or man-made, and therefore a possible nuclear explosion.

Seismographs by themselves can record seismic events, but each individual seismograph around the world registers only a very small part of all seismic events, namely, of all earthquakes. To ensure maximum detection of all significant seismic events, including possible underground nuclear detonations in the small-yield ranges, and to ensure that each seismic event will be monitored from all sides, it is essential to have a global control post network of the type recommended by the scientists who met in Geneva in 1958.

A less complete network would noticeably affect the number of seismic events detected, but, even more important, it would have a tremendously adverse effect on the number of seismic events which can be accurately located in a geographical sense and which can then be identified as to type.

The objective of any control system over underground nuclear tests must be to distinguish any such tests from the great mass of normal and natural seismic events, that is, from the annual total of thousands of earthquakes of all sizes. The 1958 experts noted that some seismic events, though only those of relatively large size, could, after being detected, be identified as earthquakes merely through examination of the seismographic record by specialists. These scientists would, in those particular cases, recognize that certain of the recordings could have come only from earthquakes.

However, the experts also recognized that there was no way -- I repeat, no way -- in which any seismic event could be identified as an underground explosion merely by interpretation of the seismographic record. Even worse, the experts declared that in many instances it would be quite impossible for the scientists, using the equipment recommended for the international control system itself, to identify a given seismic event positively as being non-nuclear in origin, that is, as an earthquake. Such an event would therefore be left in the dubious or suspicious category. To achieve the identification of such events it would be necessary to send an inspection team to the site of the seismic event.

(Mr. Dean, United States)

Here again the prime importance of a regularly-spaced global network of 170 to 180 control posts becomes evident. This network is essential in order to have the ~~maximum~~ chance of being able to identify a detected seismic event as an earthquake from the seismographic recording alone, without any on-site inspection. It is also essential for those cases where an on-site inspection is necessary, because it will give the best chance for pin-pointing the probable site of that seismic event, namely, the exact spot which the inspection team will want to visit.

From what I have said it is clear that mere detection by distant instrumentation cannot be sufficient, for distant instrumentation does not at all provide for identification, which is the real aim of a control system over possible underground tests. The inter-relation between the problem of detection and the infinitely more difficult and complex problem of identification occurs again and again throughout the report of the 1958 experts, to which the Soviet scientists and their Government subscribed without any reservation. They have never challenged this report on scientific grounds with scientific evidence, nor, so far as I am aware, has anyone else.

I am sorry to have bored the Conference with all these details -- for boring I know it is -- but I hope that all of us around this table may now have a good idea of the control system which the experts recommended and which is the technical foundation of the draft treaty of 18 April 1961 which the Western Powers have proposed (ENDC/9). As my earlier quotations from the verbatim records of the Conference on the Discontinuance of Nuclear Weapon Tests indicated, the Soviet Union also supported this control system right up until July 1961.

However, what had been scientifically indispensable for the Soviet Union in July 1961, lo and behold, became totally superfluous for political reasons in November, after the Soviet Union had completed its 1961 test series; and ever since and to this very day the Soviet Union has been trying, quite unsuccessfully, to defend this departure from a scientific basis, this total about-face.

In a situation such as this it seems only logical to say that a very heavy burden, indeed, of proof falls on the Soviet Union to demonstrate that there is some basis for its completely new but scientifically unsupportable position. The Soviet Union now finds itself in the position of challenging the correctness not only of the United Kingdom and the United States point of view, but even of the views which it, itself, expressed repeatedly and strongly right up until last year.

(Mr. Dean, United States)

The Soviet Union ought therefore to supply us with convincing evidence, scientific data and reasoned explanations. But it has not. In fact, it has supplied us with nothing along these lines. Even worse, Mr. Zorin, at the informal meeting of all delegation chiefs on 23 March last, tried to convert this eminently technical question into some sort of political question, which it most certainly is not.

When all is said and done, three reasons have been offered by the Soviet delegation to explain the Soviet Union's complete reversal during the past year on the fundamental scientific requirements of international control.

First, it is said that all past nuclear tests have been fully reported to the world on the basis of data recorded solely by so-called national control systems.

Secondly, we are told, in general language, that there have been major break-throughs in instrumentation and methods of data analysis which make an international control system superfluous.

Thirdly, reference is made to the proposal of Prime Minister Macmillan and President Kennedy on 3 September 1961 that there should be an atmospheric test ban without international control and that, at the same time, we should continue to try to conclude a treaty in all other environments (GEN/DNT/120).

Let me consider each of these Soviet points.

As to the first, Mr. Tsarapkin, at the 28 March meeting of the Sub-Committee, talked much about how all tests have been reported to the world even though there is no international control system (ENDC/SC.1/PV.4/Rev.1/Corr.1). He noted particularly that there had been many such announcements between 1949 and 1958, as well as during the recent Soviet test series.

The representative of the United Kingdom pointed out -- and, I submit, quite correctly -- that Mr. Tsarapkin had really proved too much. Mr. Godber observed that this very situation was perfectly well known when the scientists met in Geneva in 1958 to discuss nuclear test ban control problems. Despite this, the scientists had made only passing references in their report to existing national systems, and, instead, they had recommended the installation of a completely new global system operated on an international basis. In other words, they had considered the possibilities offered by these non-international systems and they had rejected them as inadequate. This is hardly surprising when one realizes that the great bulk of tests through 1958 involved medium or large atmospheric nuclear

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detonations, which are relatively -- I repeat, relatively -- the least difficult of those in any environment to detect and identify by either national or international control systems.

The 1961 Soviet test series again seems to have involved this type of atmospheric tests, and, also, many of them were in the very large megaton -- or millions of tons -- yield.

The 1958 experts and the 1959 high altitude experts, however, had to propose methods to guard against all tests: in outer space, at high altitudes, in the atmosphere, on and under the water, and underground. As a result, these experts suggested the all-embracing system, which I have just described, to monitor all environments, including the atmosphere, in such a way as to inhibit potential violators as effectively as possible.

The second Soviet point, which is closely connected with the foregoing, is that, regardless of the situation in 1958, scientific advances have so altered the picture that there can be no doubt of the present adequacy of non-international systems for controlling a test ban. However, to prove this, Mr. Tsarapkin cited no objective scientific evidence, but only a few Western newspaper articles about some supposed new advanced instrumentation. Again let me say that if this advanced instrumentation is now in existence, our scientists do not know about it.

He also referred to the alleged recent world-wide recording -- that is, detection -- of a few United States underground tests. He has not, of course, made any reference to how many such tests may not have been recorded on national systems.

To take the latter first, there should not be anything surprising in the fact that certain -- I emphasize, certain -- seismic waves produced by certain seismic events are recorded by one or more of the existing seismographic stations. Certain earthquakes of various intensities have been recorded or detected for years. So long as man himself was not conducting any underground explosions, there was no problem of identifying the nature of these seismic events because it was clear that any recorded seismic signal must have been produced by an earthquake or some other natural disturbance.

But today our problem is quite different. Today our chief task of control is to identify the nature of those seismic events which are detected. And I

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have explained here at very tedious length why the difficult task of identification as to type demands both a global network of regularly spaced and internationally operated control posts and adequate and effective procedures for on-site inspections by trained and experienced teams of scientists.

The fact that Mr. Tsarapkin read in the Press last December that Japanese, Finnish and Swedish seismographic stations had picked up signals from the United States underground peaceful uses shot called "Gnome" on 10 December 1961 certainly does not alter the picture. The exact date, hour and minute of the "Gnome" explosion and its probable yield was announced in advance to the whole world.

This meant that there was no problem of the identification of "Gnome" either as an earthquake or as an explosion, because it was known that an underground explosion was going to take place at that site. Seismologists merely had to study their recordings carefully for that particular point in time, and if they found anything in that location they could ascribe it to "Gnome".

Furthermore, detection of the "Gnome" shot was made relatively easy by the fact that it was fired in a solid salt formation so that the coupling of the explosive energy into the ground was very strong and the resulting seismic signals were of a high intensity.

The United States underground shots fired in other kinds of media have been much less easily detected. For example, it is our understanding that no other United States shot in the current underground series, with the exception of the "Gnome" shot for peaceful uses, has been detected in Sweden. The Swedish scientists have advised us that even after the United States announced the dates and times when these underground shots were conducted they were unable to find any useful signals on their seismographic records for those dates, hours and seconds. We understand that they have rechecked their records and have been unable to detect any shots other than "Gnome".

As for the Soviet underground explosion of 2 February 1962, which Premier Khrushchev has said was detonated by the Soviet Union in order to trick the West -- I am using his exact language, "in order to trick the West" -- we know that it was not a small shot but indeed quite a large one. Furthermore, it took place in a relatively aseismic area of the Soviet Union, or at least in an area where earthquakes of such intensity as this large detonation do not occur. Finally, it happened very near to a well-known Soviet nuclear test site where the Soviet Union has often tested.

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I submit that in these circumstances the United States Government was justified in putting out a statement which indicated our presumption that a Soviet underground nuclear test had been carried out. But surely the very special circumstances of that 2 February test cannot invalidate in the slightest degree the experts' conclusions in 1958 about the control system needed to monitor smaller underground tests. The latter could be conducted secretly and probably in seismic areas in the hope that the frequency of earthquakes in such areas would prevent the detection and identification of such secret underground tests.

As for the Soviet representative's claims regarding new and improved instrumentation, we were told that one Soviet seismologist, whose name was not given, had succeeded in improving the method of calculating the probable geographical location of the epicentre of the seismic event. But geographical location of an event is not identification of the type of event -- that is, the seismologist may know better where it occurred but he does not know what has occurred. Detection, geographic location and identification as to type must not be confused with each other. The usefulness of exact geographical location would become very important if there were on-site inspection teams seeking the point of origin of the unidentified seismic event in order to determine the cause of the event. But it is just such inspections that the Soviet Union, -- quite unreasonably, I submit -- now refuses to permit.

The Soviet representative's references to newspaper stories of instrumentation progress also prove nothing. Of course, scientists all over the world are seeking improved methods of detection and improved methods of location and, as I have said, we also hope for future improvements in the science of identification as to type after the international treaty control system is built and put into operation. None of this, however, has present application.

When the experts met in 1958 and when the United Kingdom, Soviet and United States scientists met again in Geneva in December 1959 and May 1960, they agreed on what they hoped would be many promising avenues of research. We even invited the Soviet Union to participate with us in this research. We in the United States, by the expenditure of a great many millions of dollars, have followed this up diligently with large-scale research, but we have scored no break-through as yet, especially with regard to identification. If Soviet scientists or any other scientists have been more successful, we would like to hear about it. We cannot understand why the Soviet Union withholds such new data, if indeed they really exist.

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In any case, our own large-scale research assault on the problem of seismic detection and identification will continue, but, despite promising avenues of investigation which give us grounds to hope for improvements, no substantial scientific gain has as yet been realized. So far as our scientists are concerned and so far as data available to them are concerned, we have no basis for believing that the Soviet Union or any other country has done any better than the United States scientists, in spite of Mr. Zorin's and Mr. Tsarapkin's unsupported hints to the contrary. It is the Soviet Union which is challenging the conclusions of the experts from eight countries, including the Soviet Union, who met in Geneva in 1958, and, as I have said already, this puts the burden of proof squarely on the Soviet Union.

With regard to my third point, nothing in the United States-United Kingdom proposal of 3 September 1961 for an atmospheric test ban after the third Soviet test negates the need for effective international controls. As the Soviet representative is well aware, that offer did not concern underwater, underground or outer-space environments at all; it related solely to the atmosphere, and even then only to the special situation of that particular moment in history, after the second or third Soviet atmospheric test of nuclear weapons had occurred.

On 3 September 1961 it still seemed possible to halt the new Soviet test series in the atmosphere and in this way to prevent a new, ascending spiral of testing by all sides in the nuclear arms race. To achieve this objective we in the West were willing to contemplate an atmospheric test ban which would, in part at least, be controlled by existing monitoring systems. In order to stop further Soviet tests we were prepared to run certain risks. Unfortunately, Chairman Khrushchev harshly and abruptly rejected that offer and the Soviet atmospheric tests continued until even a sixty-megaton bomb had been exploded despite the fact that a resolution of the United Nations General Assembly (1632(XVI)) again asked the Soviet Union not to continue testing.

Nevertheless, we also said on 3 September that the atmospheric ban should be only the first step towards a total ban and that negotiations for a total ban should continue on an urgent basis. Thus we envisaged the rapid installation of an international control system which would have monitored an atmospheric test ban as well as a test ban in other environments. In addition, the United States-United Kingdom proposal was open for Soviet acceptance only until 9 September.

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On that date, as I said earlier, it was rejected by Chairman Khrushchev when he announced that Soviet atmospheric tests would continue, as continue they did.

At that point, I submit, the situation totally changed. Our problem again became one of negotiating a comprehensive test ban treaty under effective international control rather than of reaching a somewhat unsatisfactory interim accord on an atmospheric test ban only. The latter concept had been part of an effort both to stop further Soviet tests in the atmosphere and to keep the arms race in nuclear weapons from bursting forth again in full force. It is indeed unfortunate that the Soviet Union refused to co-operate in achieving these objectives at that crucial moment in history, but decided instead to go on with its own series of tests which, it has stated, were undertaken to meet the needs of its own military security.

From what I have said, it is quite apparent that none of the hastily concocted, pseudo-scientific Soviet arguments against the technical necessity for an international control system has any validity whatsoever. Certainly, the Soviet Union has failed to adduce any scientific evidence which is essential to establish its case. In this connexion, I must note that an international control system is not only scientifically indispensable but also politically indispensable. Such a system, and only such a system, could ever gain international public acceptance for its impartiality and objectivity. Its data and analyses would have world standing. The data produced by non-international systems would always be suspect as incomplete and partisan, if not indeed, in some cases, as outright falsification.

In these circumstances, if reliance were put on so-called national systems, which after all have only some detection capability for larger seismic events but almost no identification capability, many suspicious seismic events would be recorded or detected on nationally operated seismographs. There would be no way of identifying any of these events. Inevitably, arguments would ensue between the rival nuclear sides and great excitement and tension might result, with each side trying to discredit the data and analyses of the other. Since it would be impossible for any conclusions to be reached that had general acceptance, potential violators could well have an open path for attempted clandestine violations of a nuclear test ban treaty. They would be able to contribute to confusing the situation by challenging the reliability or objectivity of any data put forward by the rival side, and they could thus count fairly reliably on avoiding discovery.



(Mr. Dean, United States)

There are also other political side facets of a nuclear test ban control system. The Soviet Union proclaims that its refusal to agree to international controls, despite all the safeguards we have introduced, is based on the real possibility of their misuse for espionage purposes. Of course, we have analysed this line and we have shown its utter groundlessness. This may be why the Soviet Union now also seeks to justify its opposition to international control on the alleged technical adequacy of so-called national systems. I suspect that this more recent theme has really been thought up to remove some of the need for a total Soviet reliance on the charges that an international control system to monitor the nuclear test ban treaty would make it possible for the West to advance its alleged objective of spying upon the Soviet Union.

But this announced Soviet fear of espionage was with us in 1958 at the start of the Conference on the Discontinuance of Nuclear Weapon Tests. The United States and the United Kingdom have made great efforts to satisfy any reasonable Soviet concerns in this field, always provided that it could be done without undermining the effectiveness of the international control system. The history of the negotiations shows that weeks and months were spent patiently working out compromise solutions for many issues, such as the composition by nationality of the inspection teams and the staffs of control posts and the international headquarters. I gave some details in this respect at the outset of my remarks today.

The result of all this lengthy negotiation was a system absolutely devoid of any espionage potential. We have done our best to meet all Soviet desires in this respect. This fact makes irrelevant the frequent accusations by Soviet representatives that the United States desires to use the nuclear test ban system to conduct espionage in the Soviet Union. This is not correct, of course. It can have nothing whatsoever to do with the issue of whether the carefully devised measures of control over a test ban which we and the United Kingdom advocate might be able to serve any intelligence aims which any country might harbour towards another. As Secretary Rusk clearly showed in the detailed analysis incorporated in his speech here on 23 March last (ENDC/PV.8, p.14 et seq.), no espionage danger could arise.

Since I have already bored the Committee with all these tendentious details, I shall not of course repeat all Mr. Rusk said then, but his statement showed that

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foreigners would be a minority at each fixed control post and that such foreigners on host country territory would be under constant Soviet supervision at all times. The exact sites of the control posts themselves could not be chosen without Soviet Government approval. Foreigners on inspection teams would be under constant supervision by Soviet Government representatives. The amount of equipment that foreigners could carry would be limited, they would be able to carry out only prescribed technical tasks. The area subject to examination during each on-site inspection would be small and at the most would never exceed more than one part in two thousand of Soviet territory in any one year. Moreover, most of this work would be carried out in the earthquake areas of the Soviet Union far from centres of military or industrial activity. Finally, all the occasional air-sampling flights would take place in Soviet planes with Soviet crews and with Soviet Government observers under fully controlled conditions and along predetermined, Soviet-approved flight routes. It is clear that no one interested in espionage would undertake it by means of the control and inspection system embodied in the United States-United Kingdom nuclear test ban treaty. That treaty and its operation simply cannot be used for espionage.

In my remarks today I have indicated, I believe, why international controls over a test ban treaty are essential and why those controls must take the form of an international system. I have shown that there are no logical reasons why the Soviet Union should fear such a system, and that the United States and the United Kingdom have displayed continuing negotiating ingenuity to try to allay Soviet fears. Indeed, even the Soviet Union, in its memorandum of 26 September 1961, said that it would be ready to accept certain fixed observation posts manned by foreigners on its territory, to reduce Western fears of any surprise attack by the Soviet Union. Yet, by definition, this would not be a disarmament measure, whereas a test ban would be, and a test ban would eliminate all further tests in all further environments.

If the Soviet Union is willing to accept fixed observation posts manned by foreigners in connexion with the carrying out of a surprise attack, what grounds exist for rejecting an international control system as part of a nuclear test ban treaty? In essence the Soviet Union should be ready, if its policy were founded upon rational considerations, to negotiate for some treaty similar to that proposed by the United States and the United Kingdom on 18 April 1961, with the

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various revisions to it made last year and this year to meet Soviet views. Yet, incomprehensible as this is to us, such is not the case. The Soviet Union adamantly refuses even to discuss international controls.

As President Kennedy said at his Press Conference on 29 March: "I am convinced that the problem of inspection has now emerged clearly as the central obstacle to an effective test ban treaty. We cannot accept any agreement that does not provide for effective international processes that will tell the world whether the treaty is being observed. The Soviet Government so far flatly rejects any such inspection of any shape or kind. This is the issue that has been made clear in Geneva."

I want to assure this Committee that the Government of the United States remains most anxious to conclude a nuclear test ban treaty to stop all tests if we have safeguards, resulting from adequate and effective international control arrangements, that the treaty will be observed on all sides. We have made literally dozens of moves to this end, and we urge the Soviet Union to begin to reciprocate -- which it has not done at all so far. After the series of over forty Soviet nuclear tests last autumn, in violation of its own self-imposed moratorium pledge, United States and free-world security cannot be made to depend upon another unenforceable Soviet commitment on paper, which lacks effective international supervision. We are willing to overlook this Soviet test series and to forgo our own proposed series of tests, but only if our security is safeguarded in the manner I have outlined. This seems to us to be very reasonable. We have done everything we know how to do in order to bring about such a nuclear test ban treaty.

The General Assembly, in its resolution 1649 (XVI) of 8 November 1961, called on the nuclear Powers to ban all tests under effective international controls. The United States voted for that resolution, as did the United Kingdom. The Soviet Union voted against that resolution, and continues to oppose its implementation. Yet it remains the only safe way to end nuclear tests. The very least that this Conference can do is to repeat the appeal of the General Assembly by calling on the Soviet Union to make possible a nuclear test ban treaty, under effective international controls. We still have not given up hope that the Soviet Union will at long last heed the wishes of mankind, reverse its completely unreasonable stand, and thus escape the truly awful responsibility that now rests upon the Soviet Union for the continuance of nuclear testing in the world.

(Mr. Dean, United States)

I regret that I have spoken at such length and in such detail, but it seemed to me that the importance of this subject, and the earnest and sincere desire of the United Kingdom and the United States to bring about a nuclear test ban treaty, warranted my going into a tremendous amount of detail on what has taken place in connexion with these nuclear test ban negotiations.

Mr. GEBRE-EGZY (Ethiopia): We note with regret that once again we are confronted by the fact that there has been no progress on the cessation of nuclear tests. We regret this, and essentially for three reasons.

The first reason is, as my Minister made clear when he made his general statement here (ENDC/PV.6), that what is at stake is our own survival. I hope I will be forgiven for saying that if we were dealing with the old, the traditional kind of disarmament, we could perhaps with small justification keep quiet about the present impasse. If it involved only conventional weapons, one could, I suppose, say that we could leave it to the major Powers. However, as has been made clear here, this is not the case. What is involved is not only the future existence of the major Powers or the nuclear Powers: it goes beyond that; it affects the survival of each one of us. I submit that, because of this, we have a role to play, a role which has been recognized by the nuclear Powers themselves.

The second reason is the following. The nuclear Powers themselves, the major Powers -- all of them without exception -- have already told us not once but many times, and with authority, that there is no security in accumulating nuclear weapons. I shall not take up time in citing these statements; I think all of us are acquainted with them. The President of the United States, the Prime Minister of the United Kingdom and the Prime Minister of the Soviet Union have all said repeatedly that security needs are not served by increasing the power of destruction which they have been accumulating during the last eight or nine years.

The third reason why we regret the lack of progress is that, as the representative of Burma has shown, it is possible to find some accommodation. Although the record of the statements on both sides on this issue shows that each side is rigidly maintaining its position, scientific progress and the factual situation indicate that it is possible to arrive at an accommodation -- a political accommodation, if you wish.

(Mr. Gebre-Egzy (Ethiopia))

For those three reasons, as I have said, we are very much appalled, we are very much concerned, that no progress has been made.

Our position on nuclear testing, as my Minister has made clear, was established many years ago. We have repeatedly said, whenever the situation has become intense and whenever the item has been debated at the United Nations, that we are against all testing. I, myself, speaking for my Government at the sixteenth session of the General Assembly during the debate on the Soviet tests, said that it made no difference to us whether the explosion was small or big; we are against all of them, whether they be underground, in the atmosphere, or anywhere else. That is our position, and we are impelled to continue to hold it. If we are asked why, the answer, again, is simple. From the information which has been given to us, not by our people, but by the scientists of the Powers conducting these tests, we know in no uncertain terms that our future is at stake. Therefore, the only logical position we can take is not to make any distinction as to whether the test was small or was conducted underground, in the atmosphere or, if I may say so, under the table, but to say categorically that we are against all tests. I repeat today that this is our position. We cannot make any exceptions.

If these tests concerned only the nuclear Powers, only those which have the means of conducting the tests, then it could be said that this was none of our business. But, as I said earlier, we have been told time and time again that our very survival is at stake. That being the case, we are compelled to state that we are against all tests.

As I indicated earlier, it seems to us that it would be possible to find a formula -- I am not going to suggest one -- which could accommodate both sides. I notice with regret from the records of the discussions in the Sub-Committee on nuclear tests that consideration has not been given to many of the suggestions that have been made by the Foreign Ministers at this Conference. I will quote a few of those suggestions. The Foreign Minister of Brazil said:

"The technicians of the nations most advanced in nuclear science are, I believe, agreed on the possibility of effective control of tests under water, in the atmosphere and in the biosphere, without more thorough on-site inspections and checks being necessary." (ENDC/PV.3, page 9)

(Mr. Gebre-Egzy, Ethiopia)

My own Foreign Minister said:

"In this connexion we fail to understand why an adequate system of international verification cannot be developed which could be used when national systems of verification were challenged. Is it not possible to devise an international scientific system of verification where an appeal could be lodged to resolve differences in results of national detection systems? It seems to me that this area deserves exploration by scientific experts, for, if the answer is positive, surely the present controversy over detection and verification would fall to the ground, clearing the way for prompt action on the treaty." (ENDC/PV.6, page 20)

I also notice that the Defence Minister of India, Mr. Krishna Menon, made another suggestion, as follows:

"We would also suggest that if the idea is that one cannot take for granted the results of the detection efforts by any of the three countries involved in this matter -- that is to say, if the United States is not prepared to accept the judgement on this score of the United Kingdom or the Soviet Union, or the other way round -- it may be worth considering whether scientific detection stations could be established by national efforts in other countries or could be internationally established. If it is possible to spread bases all round the world or to manufacture these weapons in large quantities, it should also be possible to establish these peace stations in various parts of the world, in countries that are partly committed or are uncommitted to the two blocs. Then, in the event of an explosion, the results would come in from everywhere -- just as today we measure radiation, and the results are internationally communicated. Therefore, as a compromise measure, it could be agreed for the time being that we should have other monitoring stations from which results would be received. If all the data collected pointed to one result, there would be no difficulty; if there were differences of opinion, then it would be for us to consider what could be done about them." (ENDC/PV.5, page 39)

I have cited these suggestions not in order to formulate proposals, but rather because from a reading of the verbatim records, it appears that the Sub-Committee on the discontinuance of nuclear tests has made no attempt to take into account these suggestions which I thought, and I still think, could help to find a way out.

(Mr. Gebre-Egzy, Ethiopia)

As the representative of Burma pointed out this morning, other formulas are possible. He suggested one such formula, and I am quite certain we could find many others which could be discussed by the three nuclear Powers so that they could arrive at an agreement which could save us, and them too, from the destruction of atomic weapons.

I would conclude by appealing to the three nuclear Powers to take all these suggestions into account, to use the progress of science and to arrive at an early conclusion. I fear that there is already a tendency on the part of the public to say that the nuclear Powers do not really want to stop nuclear tests. This, I submit, is a very bad beginning for the work of this Conference, and it is the duty of the three nuclear Powers to evaluate the scientific advances and to do their best to come to an agreement.

Mr. CAVALLETTI (Italy) (translation from French): The Italian delegation, like the Ethiopian delegation just now, cannot conceal its anxiety over the difficulties with which the Sub-Committee is continuing to meet in its endeavours to reach an agreement on the prohibition of nuclear tests. We still believe that it is absolutely essential and urgent to reach such an agreement if we are to stop the nuclear arms race, thus offering the peoples of the world a first reassurance and creating an increasingly favourable atmosphere for this Conference.

We naturally see the question of the discontinuance of nuclear tests within the general framework of the security of all peoples. We regard an agreement on the subject as an important contribution to that security. If, on the contrary, the agreement served to produce a situation even more dangerous than the present one, we should be working against our purpose. We must therefore reach a dependable agreement -- an agreement providing the maximum guarantees for all and precluding any possibility of violation. It must in no case serve to encourage or permit the conduct of clandestine nuclear tests.

That is why we feel apprehensive about the opposition which the Soviet delegation still appears to maintain against any international control measures relating to the prohibition of tests.

(Mr. Cavalletti, Italy)

I may add that we are rather surprised at this attitude, because it does not appear to correspond to the statements on control which the Soviet delegation has reiterated several times. For the Soviet delegation has fully accepted the concept of international control as an essential element of disarmament; that principle was accepted by the Soviet Union in the joint statement of agreed principles for disarmament negotiations, and we see that it has been adopted in the draft Treaty on General and Complete Disarmament which the Soviet delegation has submitted to this Conference. And that is perfectly natural, since for three years during the discussions on tests at Geneva, the principle of international control was never questioned by the Soviet delegation, disagreement being confined to its application.

Moreover, in discussing general and complete disarmament the Soviet delegation has often affirmed that the practical measures for international control should be studied according to the circumstances and applied in each particular case side by side with the disarmament measures adopted.

For the reasons I have just given, I hope that the Soviet Union, in compliance with the general principles on international control to which it has already agreed, will now make an effort to show goodwill concerning the first particular case before us for consideration: the control of nuclear tests. I appeal most sincerely and earnestly to Mr. Zorin in that sense.

The question of the international control of tests is certainly a technical one, but it is not only technical: it is also political. It is not only a matter of knowing whether the Soviet scientists have been able to devise instruments so perfect that they can record any nuclear explosion whatsoever and distinguish it from natural earth tremors without any possibility of error. That is undoubtedly a very important problem; but it is also necessary to know how the recordings of such instruments would be interpreted if they were controlled solely by national authorities -- in other words, if there was only "self-control".

Let us take a practical example: after having concluded an agreement on the discontinuance of tests, one of the parties, in violation of the agreement, makes secret preparations for tests, while the other party, faithfully fulfilling the agreement makes no such preparations. If there is no international control, the party which has prepared for tests can announce at a certain moment that its detection instruments have recorded tests carried out by the other party -- tests which, of course, have never taken place. After which the party denouncing